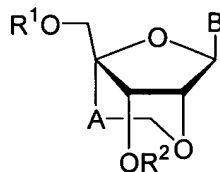


Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1. (previously presented) A compound of formula (1):



(1)

wherein:

R¹ and R² are the same or different and are selected from the group consisting of hydrogen atoms, hydroxyl protecting groups, phosphate groups, protected phosphate groups and a group of formula -P(R³)R⁴, wherein R³ and R⁴ are the same or different and are selected from the group consisting of hydroxyl groups, protected hydroxyl groups, mercapto groups, protected mercapto groups, amino groups, alkoxy groups having from 1 to 4 carbon atoms, alkylthio groups having from 1 to 4 carbon atoms, cyanoalkoxy groups having from 1 to 5 carbon atoms and amino groups substituted by an alkyl group having from 1 to 4 carbon atoms;

A represents a methylene group; and
B is selected from the group consisting of unsubstituted purin-9-yl groups, unsubstituted 2-oxo-pyrimidin-1-yl groups, and substituted purin-9-yl groups and substituted 2-oxo-pyrimidin-1-yl groups having at least one substituent α selected from the group consisting of hydroxyl groups, protected hydroxyl groups, alkoxy groups having from 1 to 4 carbon atoms, mercapto groups, protected mercapto groups, alkylthio groups having from 1 to 4 carbon atoms, amino groups, protected amino groups, amino groups substituted by an alkyl group having from 1 to 4 carbon atoms, alkyl groups having from 1 to 4 carbon atoms and halogen atoms; or a salt thereof.

Claim 2. (original) The compound according to Claim 1 or a salt thereof, wherein R^1 is selected from the group consisting of hydrogen atoms, aliphatic acyl groups, aromatic acyl groups, methyl groups substituted by from 1 to 3 aryl groups, methyl groups substituted by from 1 to 3 aryl groups the aryl ring of which is substituted by a substituent selected from the group consisting of lower alkyl, lower alkoxy, halogen and cyano groups, and silyl groups.

Claim 3. (original) The compound according to Claim 1 or a salt thereof, wherein R^1 is selected from the group consisting of hydrogen atoms, acetyl groups, benzoyl groups, benzyl groups, p-

methoxybenzyl groups, dimethoxytrityl groups, mono-methoxytrityl groups and tert-butyldiphenylsilyl groups.

Claim 4. (original) The compound according to Claim 1 or a salt thereof, wherein R^2 is selected from the group consisting of hydrogen atoms, aliphatic acyl groups, aromatic acyl groups, methyl groups substituted by from 1 to 3 aryl groups, methyl groups substituted by from 1 to 3 aryl groups the aryl ring of which is substituted by a substituent selected from the group consisting of lower alkyl, lower alkoxy, halogen and cyano groups, silyl groups, phosphoramidite groups, phosphonyl groups, phosphate groups and protected phosphate groups.

Claim 5. (original) The compound according to Claim 2 or a salt thereof, wherein R^2 is selected from the group consisting of hydrogen atoms, aliphatic acyl groups, aromatic acyl groups, methyl groups substituted by from 1 to 3 aryl groups, methyl groups substituted by from 1 to 3 aryl groups the aryl ring of which is substituted by a substituent selected from the group consisting of lower alkyl, lower alkoxy, halogen and cyano groups, silyl groups, phosphoramidite groups, phosphonyl groups, phosphate groups and protected phosphate groups.

Claim 6. (original) The compound according to Claim 3 or a salt thereof, wherein R^2 is selected from the group consisting of hydrogen atoms, aliphatic acyl groups, aromatic acyl groups,

methyl groups substituted by from 1 to 3 aryl groups, methyl groups substituted by from 1 to 3 aryl groups the aryl ring of which is substituted by a substituent selected from the group consisting of lower alkyl, lower alkoxy, halogen and cyano groups, silyl groups, phosphoramidite groups, phosphonyl groups, phosphate groups and protected phosphate groups.

Claim 7. (currently amended) The compound according to Claim 1 or a salt thereof, wherein R^2 is selected from the group consisting of hydrogen atoms, acetyl groups, benzoyl groups, benzyl groups, p-methoxybenzyl groups, tert-butyldiphenylsilyl groups, $-P(OC_2H_4CN)(N(CH(CH_3)_2)_2)$, $-P(OCH_3)(N(CH(CH_3)_2)_2)$, phosphonyl groups, 2-chlorophenyl phosphate groups and 4-chlorophenyl phosphate groups.

Claim 8. (currently amended) The compound according to Claim 2 or a salt thereof, wherein R^2 is selected from the group consisting of hydrogen atoms, acetyl groups, benzoyl groups, benzyl groups, p-methoxybenzyl groups, tert-butyldiphenylsilyl groups, $-P(OC_2H_4CN)(N(CH(CH_3)_2)_2)$, $-P(OCH_3)(N(CH(CH_3)_2)_2)$, phosphonyl groups, 2-chlorophenyl phosphate groups and 4-chlorophenyl phosphate groups.

Claim 9. (currently amended) The compound according to Claim 3 or a salt thereof, wherein R^2 is selected from the group consisting of hydrogen atoms, acetyl groups, benzoyl groups,

benzyl groups, p-methoxybenzyl groups, tert-butyldiphenylsilyl group, $-P(OC_2H_4CN)(N(CH(CH_3)_2)_2)$, $-P(OCH_3)(NCH(CH_3)_2)$, phosphonyl groups, 2-chlorophenyl phosphate groups and 4-chlorophenyl phosphate groups.

Claims 10 to 18. (canceled)

Claim 19. (previously presented) The compound according to Claim 1 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl, 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoropyrimidin-1-yl; 2-oxo-4-amino-5-fluoropyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloropyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-

mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl, 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 20. (previously presented) The compound according to Claim 2 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoropyrimidin-1-yl; 2-oxo-4-amino-5-fluoropyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl

group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 21. (previously presented) The compound according to Claim 3 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoropyrimidin-1-yl; 2-oxo-4-amino-5-fluoropyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercaptopyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl groups, the amino group of which is protected.

Claim 22. (previously presented) The compound according to Claim 4 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoropyrimidin-1-yl; 2-oxo-4-amino-5-fluoropyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 23. (previously presented) The compound according to Claim 5 or a salt thereof, wherein B is selected from the group

consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 24. (previously presented) The compound according to Claim 6 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-

chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 25. (previously presented) The compound according to Claim 7 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-

fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoropyrimidin-1-yl; 2-oxo-4-amino-5-fluoropyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloropyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 26. (previously presented) The compound according to Claim 8 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of

which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoropyrimidin-1-yl; 2-oxo-4-amino-5-fluoropyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 27. (previously presented) The compound according to Claim 9 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diaminopurin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-

amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloropurin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercaptopyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claims 28 to 36. (canceled)

Claim 37. (original) The compound according to Claim 1 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 38. (original) The compound according to Claim 2 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-

hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 39. (original) The compound according to Claim 3 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 40. (original) The compound according to Claim 4 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 41. (original) The compound according to Claim 5 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 42. (original) The compound according to Claim 6 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 43. (original) The compound according to Claim 7 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 44. (original) The compound according to Claim 8 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 45. (original) The compound according to Claim 9 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl,

cytosinyl, 2-oxo-5-methyl-4-benzoylamino-pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claims 46 to 54. (canceled)

Claim 55. (original) A compound or a salt thereof selected from the group consisting of
2'-O,4'-C-ethyleneguanosine,
2'-O,4'-C-ethyleneadenosine,
3',5'-di-O-benzyl-2'-O,4'-C-ethylene-6-N-benzoyladenosine,
3',5'-di-O-benzyl-2'-O,4'-C-ethylene-2-N-isobutyrylguanosine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-6-N-benzoyladenosine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-2-N-isobutyrylguanosine,
2'-O,4'-C-ethylene-2-N-isobutyrylguanosine,
2'-O,4'-C-ethylene-6-N-benzoyladenosine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-6-N-benzoyladenosine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-2-N-isobutyrylguanosine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite,
2'-O,4'-C-ethyleneuridine,
2'-O,4'-C-ethylene-5-methyluridine,
2'-O,4'-C-ethylenecytidine,
2'-O,4'-C-ethylene-5-methylcytidine,
3',5'-di-O-benzyl-2'-O,4'-C-ethyleneuridine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethyleneuridine,
3',5'-di-O-benzyl-2'-O,4'-C-ethylene-5-methyluridine,

5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-5-methyluridine,
3',5'-di-O-benzyl-2'-O,4'-C-ethylene-4-N-benzoylcytidine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoylcytidine,
3',5'-di-O-benzyl-2'-O,4'-C-ethylene-4-N-benzoyl-5-
methylcytidine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoyl-5-
methylcytidine,
2'-O,4'-C-ethylene-4-N-benzoylcytidine,
2'-O,4'-C-ethylene-4-N-benzoyl-5-methylcytidine,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-uridine-3'-O-(2-
cyanoethyl N,N-diisopropyl)phosphoramidite,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-5-methyluridine-3'-O-(2-
cyanoethyl N,N-diisopropyl)phosphoramidite,
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoylcytidine-3'-O-
(2-cyanoethyl N,N-diisopropyl)phosphoramidite, and
5'-O-dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoyl-5-
methylcytidine-3'-O-(2-cyanoethyl N,N-
diisopropyl)phosphoramidite.

Claim 56. (original) 5'-O-Dimethoxytrityl-2'-O,4'-C-
ethylene-5-methyluridine-3'-O-(2-cyanoethyl N,N-
diisopropyl)phosphoramidite or a salt thereof.

Claim 57. (original) 5'-O-Dimethoxytrityl-2'-O,4'-C-
ethylene-6-N-benzoyl-adenosine-3'-O-(2-cyanoethyl N,N-
diisopropyl)phosphoramidite or a salt thereof.

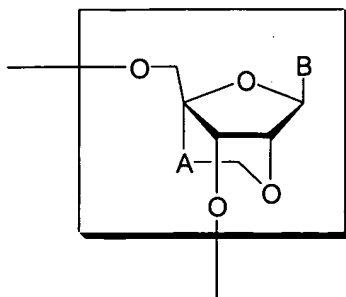
Claim 58. (original) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-2-N-isobutyrylguanosine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite or a salt thereof.

Claim 59. (original) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-uridine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite or a salt thereof.

Claim 60. (original) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoylcytidine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite or a salt thereof.

Claim 61. (original) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoyl-5-methylcytidine-3'-O-(2-cyanoethyl N,N-diisopropyl)phosphoramidite or a salt thereof.

Claim 62. (previously presented) An oligonucleotide analogue comprising two or more nucleoside units wherein at least one of said nucleoside units is a structure of the formula (2):



(2)

wherein:

A represents a methylene group; and

B is selected from the group consisting of an unsubstituted purin-9-yl group, an unsubstituted 2-oxo-pyrimidin-1-yl group, a purin-9-yl group substituted with at least one substituent α and a 2-oxo-pyrimidin-1-yl group substituted with at least one substituent α , said substituent α being selected from the group consisting of an unprotected hydroxyl group, a protected hydroxyl group, an alkoxy group having from 1 to 4 carbon atoms, an unprotected mercapto group, a protected mercapto group, an alkylthio group having from 1 to 4 carbon atoms, an unprotected amino group, a protected amino group, an amino group substituted by an alkyl group having from 1 to 4 carbon atoms, an alkyl group having from 1 to 4 carbon atoms and a halogen atom; or a salt thereof.

Claim 63. (original) The oligonucleotide analogue according to claim 62 or a salt thereof, which comprises up to 100 nucleoside units and wherein nucleoside units are bonded to each other through a phosphodiester bond or a phosphorothioate bond.

Claim 64. (original) The oligonucleotide analogue according to claim 62 or a salt thereof which comprises 2 to 50 nucleoside units; and when said oligonucleotide analogue contains two or more nucleoside units of the structure of said formula (2), said nucleoside units of the structure of formula (2) are the same or different, and wherein said salt is a pharmaceutically acceptable salt.

Claim 65. (original) The oligonucleotide analogue according to claim 64 or a salt thereof which comprises 10 to 30 nucleoside units.

Claim 66. (original) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein said nucleoside units are

bonded to each other through a phosphoric acid diester bond or a phosphorothioate bond.

Claim 67. (canceled)

Claim 68. (previously presented) The oligonucleotide analogue according to Claim 62 or a salt thereof, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diamino-purin-9-yl; 2-amino-6-chloropurin-9-yl, 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-chloropurin-9-yl; 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloro-purin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-

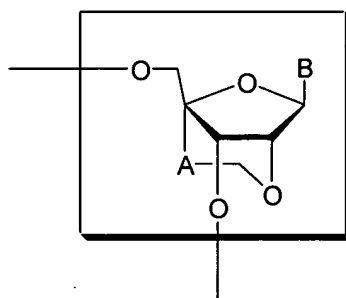
amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 69. (canceled)

Claim 70. (currently amended) The oligonucleotide analogue according to Claim 62 or a salt thereof, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-[[-]] pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claim 71. (canceled)

Claim 72. (previously presented) A pharmaceutical composition comprising a pharmaceutically effective amount of a pharmacologically active compound together with a carrier therefor, wherein said pharmacologically active compound is an oligonucleotide analogue comprising two or more nucleoside units, wherein at least one of said nucleoside units is a structure of the formula (2):



(2)

wherein:

A represents a methylene group; and

B is selected from the group consisting of an unsubstituted purin-9-yl group, an unsubstituted 2-oxo-pyrimidin-1-yl group, a purin-9-yl group substituted with at least one substituent α and a 2-oxo-pyrimidin-1-yl group substituted with at least one substituent α , said substituent α being selected from the group consisting of an unprotected hydroxyl group, a protected hydroxyl

group, an alkoxy group having from 1 to 4 carbon atoms, an unprotected mercapto group, a protected mercapto group, an alkylthio group having from 1 to 4 carbon atoms, an unprotected amino group, a protected amino group, an amino group substituted by an alkyl group having from 1 to 4 carbon atoms, an alkyl group having from 1 to 4 carbon atoms and a halogen atom; or a pharmacologically acceptable salt thereof.

Claim 73. (canceled)

Claim 74. (previously presented) A pharmaceutical composition according to Claim 72, wherein B is selected from the group consisting of 6-aminopurin-9-yl; 6-aminopurin-9-yl, the amino group of which is protected; 2,6-diamino-purin-9-yl; 2-amino-6-chloropurin-9-yl; 2-amino-6-chloropurin-9-yl, the amino group of which is protected; 2-amino-6-fluoropurin-9-yl; 2-amino-6-fluoropurin-9-yl, the amino group of which is protected; 2-amino-6-bromopurin-9-yl; 2-amino-6-bromopurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl; 2-amino-6-hydroxypurin-9-yl, the amino group of which is protected; 2-amino-6-hydroxypurin-9-yl, the amino group and hydroxyl group of which are protected; 6-amino-2-methoxypurin-9-yl; 6-amino-2-

chloropurin-9-yl, 6-amino-2-fluoropurin-9-yl; 2,6-dimethoxypurin-9-yl; 2,6-dichloro-purin-9-yl; 6-mercaptopurin-9-yl; 2-oxo-4-amino-pyrimidin-1-yl; 2-oxo-4-amino-pyrimidin-1-yl, the amino group of which is protected; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl; 2-oxo-4-amino-5-fluoro-pyrimidin-1-yl, the amino group of which is protected; 4-amino-2-oxo-5-chloro-pyrimidin-1-yl; 2-oxo-4-methoxy-pyrimidin-1-yl; 2-oxo-4-mercapto-pyrimidin-1-yl; 2-oxo-4-hydroxy-pyrimidin-1-yl; 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl; 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group and 4-amino-5-methyl-2-oxo-pyrimidin-1-yl group, the amino group of which is protected.

Claim 75. (canceled)

Claim 76. (currently amended) A pharmaceutical composition according to Claim 72, wherein B is selected from the group consisting of 6-benzoylamino-purin-9-yl, adeninyl, 2-isobutyrylamino-6-hydroxypurin-9-yl, guaninyl, 2-oxo-4-benzoylamino-pyrimidin-1-yl, cytosinyl, 2-oxo-5-methyl-4-benzoylamino-[[-]] pyrimidin-1-yl, 5-methylcytosinyl, uraciny and thyminy groups.

Claims 77 to 102. (canceled)

Claim 103. (previously presented) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-6-N-benzoyladenine or a salt thereof.

Claim 104. (previously presented) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-2-N-isobutyrylguanosine or a salt thereof.

Claim 105. (previously presented) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylenuridine or a salt thereof.

Claim 106. (previously presented) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-5-methyluridine or a salt thereof.

Claim 107. (previously presented) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoylcytidine or a salt thereof.

Claim 108. (previously presented) 5'-O-Dimethoxytrityl-2'-O,4'-C-ethylene-4-N-benzoyl-5-methylcytidine or a salt thereof.

Claim 109. (currently amended) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein B is a 6-benzoylamino purin [[-9-yl]] an adeninyl group.

Claim 110. (currently amended) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein B is a 2-isobutyrylamino [[-6-]] hydroxypurin [[-9-yl]] guaninyl group.

Claim 111. (previously presented) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein B is a uraciny group.

Claim 112. (previously presented) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein B is a 2-oxo-4-hydroxy-5-methylpyrimidin-1-yl group.

Claim 113. (currently amended) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein B is a 2-oxo-4-benzoylamino [[-]] pyrimidin [[-1-yl]] cytosinyl group.

Claim 114. (currently amended) The oligonucleotide analogue according to claim 62 or a salt thereof, wherein B is a ~~[[2-]] oxo~~ ~~[[5-]] methyl~~ ~~[[4-]] benzoylamino~~ ~~[[1-]] pyrimidin~~ ~~[[1-yl]]~~ 5-methylcytosinyl group.

Claim 115. (new) The compound according to claim 2 or a salt thereof, wherein R¹ is selected from the group consisting of benzyl, 4-methylbenzyl, 2,4,6-trimethylbenzyl, 3,4,5-trimethylbenzyl and 4-methoxybenzyl.

Claim 116. (new) The compound according to claim 4 or a salt thereof, wherein R² is selected from the group consisting of benzyl, 4-methylbenzyl, 2,4,6-trimethylbenzyl, 3,4,5-trimethylbenzyl and 4-methoxybenzyl.

Claim 117. (new) The compound according to claim 5 or a salt thereof, wherein R² is selected from the group consisting of benzyl, 4-methylbenzyl, 2,4,6-trimethylbenzyl, 3,4,5-trimethylbenzyl and 4-methoxybenzyl.

Appl. No. 09/925,673

Response to Office Action mailed August 1, 2006

Claim 118. (new) The compound according to claim 6 or a salt thereof, wherein R^2 is selected from the group consisting of benzyl, 4-methylbenzyl, 2,4,6-trimethylbenzyl, 3,4,5-trimethylbenzyl and 4-methoxybenzyl.